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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Donald James McCrady

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EXAMINER

FRANCIS, MARK P

ART UNIT

PAPER NUMBER

2193

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/648,461	Applicant(s) MCCRADY ET AL.	
	Examiner Mark P. Francis	Art Unit 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-20,23-39 and 42-47 is/are rejected.
- 7) ☒ Claim(s) 2,3,21,22,40 and 41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the application filed on August 26, 2003.
2. Claims 1-47 have been examined.

Oath/Declaration

3. The Office acknowledges receipt of a properly signed oath/declaration filed February 26, 2003.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 10, 29, and 39-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 10, 29, and 39 contain the trademark/trade name XLANG. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe

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a specific type of program code and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

7. A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4-20,23-39,and 42-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Radigan. (U.S. Pat 6,016,398)

Independent claims

With respect to claims 1,20 and 39, Radigan discloses a computer-readable medium having computer-executable instructions for compiling computer code,(Col 5:53-67, "...compiling at least a portion of source code...") the method comprising: creating a flowgraph according to abstract computer instructions, wherein the flowgraph has a plurality of basic blocks and at least one data object,(Col 7:40-67, "...a data structure containing the relationship between the tokens...") and wherein the abstract instructions are translated from a parse tree formed from computer code;(Col 7:40-67, "...The intermediate language may be represented by a parse tree...")

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assigning a depth-first order to the plurality of basic blocks; (Col 14:45-65, "...In the course of a depth-first ordered traversal...")

determining a dominance relationship(e.g. See Fig. 4A, Ascertain the dominance relationship..." and related text) between the plurality of basic blocks; (Col 7:40-67,

"...the plurality of tokens are grouped into a hierarchical structure...")

determining whether any loops are present within the flowgraph(Col 8:4-45,

"...Statement nodes may represent conditional constructs...if,while,goto,...") and, if any

loops are present, identifying the loops;(Col 4:27-60, "...a branch statement ...selects one set of statements from a number of alternative sets of statements...") determining a

usage of the at least one data object; determining a creation point, (Col 4:40-67, "...The

point where the flow of control branches...")destruction point and lock point for the at

least one data object according to the usage, identified loops, dominance relationship

and depth-first order of the plurality of basic blocks; (Col 3:13-40, "...The period of time

between the definition and the definition's kill is known as the definition's lifetime...",Col

5:53-67, "...creating a rank-n SSA intermediate language representation of the source code...")

and inserting instructions into the computer code to create the at least one data object

at the creation point,(Col 14:35-65, "...The compiler then inserts a new definition...") to

destroy the at least one data object at the destruction point and to lock the at least one

data object at the lock point. (Col 14:35-67, "...renames the uses of the inserted

definition...")

Dependent claims

With respect to claims 4, 23, and 42, the rejection of claims 1,20, and 39 are incorporated respectively and further, Radigan discloses that determining a destruction point comprises: identifying a last use of the at least one data object and identifying a first basic block in which the last use occurs from the plurality of basic blocks, wherein the last use of the at least one data object is the original destruction point; identifying a use of the at least one data object previous to the last use and identifying a second basic block in which the previous use occurs from the plurality of basic blocks; calculating an intersection of the post-dominators of the first basic block with the post-dominators of the second basic block; determining whether the intersection contains the first basic block; and choosing, if the intersection does not contain the first basic block, a new destruction point from the intersection. (Col 14:35-67, "...the compiler visits the basic block...renames the reaching definitions of the operands...")

With respect to claims 5,24, and 43, the rejection of claims 4,23, and 42 are incorporated respectively and further, Radigan discloses that choosing a new destruction point from the intersection comprises determining whether the new destruction point is in a different loop than the original destruction point and, if so, choosing a new destruction point that bypasses all inner loops between the original destruction point and the new destruction point. (Col 10:10-35, "...The series includes a rank-0 definition of the variable I that reaches five rank...")

With respect to claims 6,25, and 44, the rejection of claims 4,20, and 39 are incorporated respectively and further, Radigan discloses that determining a lock point comprises: determining a set of at least one data object; creating a first set of basic blocks from the plurality of basic blocks that write to the at least one data object; creating a second set of basic blocks from the plurality of basic blocks that read from the at least one data object; removing from the first and second sets any of the plurality of basic blocks that are not contained within a synchronized scope; and determining a type of lock to place for each of the at least one data object. (Col 10:10-35, "...The series includes a rank-0 definition of the variable I that reaches five rank...")

With respect to claims 7, 26, and 45, the rejection of claims 4,20, and 39 are incorporated respectively and further, Radigan discloses determining a type of lock for each of the at least one data object comprises selecting a read lock for the at least one data object if the first set is empty, otherwise, selecting a write lock. (Col 10:10-35, "...The series includes a rank-0 definition of the variable I that reaches five rank...")

With respect to claims 8, 27, and 46, the rejection of claims 6,25, and 44 are incorporated respectively and further, Radigan discloses that determining a lock point further comprises: identifying a first use of the at least one data object and identifying a first basic block in which the first use occurs from the plurality of basic blocks, wherein the first use of the at least one data object is the original lock point; identifying a use of

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the at least one data object subsequent to the first use and identifying a second basic block in which the subsequent use occurs from the plurality of basic blocks; calculating an intersection of the pre-dominators of the first basic block with the pre-dominators of the second basic block; determining whether the intersection contains the first basic block; and choosing, if the intersection does not contain the first basic block, a new lock point from the intersection. (Col 10:10-35, "...The series includes a rank-0 definition of the variable I that reaches five rank...")

With respect to claims 9, 28, and 47, the rejection of claims 8,27, and 46 are incorporated respectively and further, Radigan discloses that choosing a new lock point from the intersection comprises determining whether the new lock point is in a different loop than the original lock point and, if so, choosing a new lock point that bypasses all inner loops between the original lock point and the new lock point. (Col 10:10-35, "...The series includes a rank-0 definition of the variable I that reaches five rank...")

With respect to claims 10 and 29, the rejection of claims 1 and 20 are incorporated respectively and further, Radigan discloses that the computer code is XLANG/s. (Col 15:21-35, "...When a computer program is translated into a SSA intermediate language representation,...")

With respect to claims 11 and 30, the rejection of claims 1 and 20 are incorporated respectively and further, Radigan discloses that the at least one data object is a

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variable. (Col 15:34-45, "...symbolic expressions like variables, temps, arrays,...")

With respect to claims 12 and 31, the rejection of claims 1 and 20 are incorporated respectively and further, Radigan discloses that the at least one data object is a symbol.

(Col 15:22-33, "...are symbols...")

With respect to claims 13 and 32, the rejection of claims 1 and 20 are incorporated respectively and further, Radigan discloses that the at least one data object is a message. (Col 17:15-25, "...The hash function is applied to provide an answer...")

With respect to claims 14 and 33, the rejection of claims 1 and 20 are incorporated respectively and further, Radigan discloses that the flowgraph corresponds to a long-running transaction. (Col 14:45-67, "...the flow graph...")

With respect to claims 15 and 34, the rejection of claims 1 and 20 are incorporated respectively and further, Radigan discloses that the flowgraph corresponds to an atomic transaction. (Col 14:45-67, "...the flow graph...")

With respect to claims 16 and 35, the rejection of claims 1 and 20 are incorporated respectively and further, Radigan discloses that the flowgraph corresponds to a long-running transaction with an exception handler. (Col 14:45-67, "...the flow graph...")

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With respect to claims 17 and 36, the rejection of claims 1 and 20 are incorporated respectively and further, Radigan discloses that the flowgraph corresponds to a long-running transaction with compensation. (Col 14:45-67, "...the flow graph...")

With respect to claims 18 and 37, the rejection of claims 1 and 20 are incorporated respectively and further, Radigan discloses that the flowgraph corresponds to an atomic transaction with compensation. (Col 14:45-67, "...the flow graph...")

With respect to claims 19 and 38, the rejection of claims 1 and 20 are incorporated respectively and further, Radigan discloses that the flowgraph corresponds to a long-running transaction with an exception handler and compensation. (Col 14:45-67, "...the flow graph...")

Allowable Subject Matter

9. Claims 2,3,21,22,40 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark P. Francis whose telephone number is (571) 272-7956. The examiner can normally be reached on Mon-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark P. Francis

Patent Examiner

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